

Response to Office Action of November 2, 2004  
U.S. Application No.: 10/688,253

Attorney Docket No.: FSF-031431

## REMARKS

Original claims 1-20 have been replaced with new claims 21-45.

New claim 21 derives from a combination of original claims 1, 2 and 10.

Further, a hydroxyurea and a phenidone are disclosed on p. 30 of the

specification. Claims 22-23 and 25-30 derive respectively from original

claims 11-12 and 15-20. Claim 31 derives from original claim 1. Claims

32-38 derive respectively from original claims 2-6 and 19-20. Claim 39

derives from a combination of original claims 1, 2, and 7. Claim 40

corresponds to original claim 8. Claim 41 corresponds to original claim 9.

Claim 42 derives from original claim 1 and 2. Claims 43-45 derive

respectively from original claims 3 and 19-20. Accordingly, no new matter

is presented. Upon entry of the amendment, claims 21-45 will be pending in

the application.

### **I. Response to Claim Rejection under 35 U.S.C. § 102**

#### **A. Arai et al.**

Claims 1 and 10-15 were rejected under 35 U.S.C. § 102 (b) as being unpatentable over Arai et al.

Applicants respectfully submit that Arai et al. does not disclose the photothermographic material of the claimed invention. Arai fails to teach

Response to Office Action of November 2, 2004  
U.S. Application No.: 10/633,253

Attorney Docket No.: FSSF-031431

the compounds disclosed in claims 31 to 45. Further, new claim 21 limits the reducing group of formula (4) to a reducing group derived from a hydroxyurea or a phenidone, neither of which is disclosed in Arai et al. Consequently, claims 21-45 are all considered patentable over Arai et al.

Because Arai et al. does not teach nor suggest the photothermographic material of the present invention, the withdrawal of the rejection is respectfully requested.

**B. Okada et al.**

Claims 1 and 10-15 were rejected under 35 U.S.C. § 102 (e) as being unpatentable over Okada et al.

Applicants respectfully submit that Okada et al. does not disclose the photothermographic material of the claimed invention. Okada fails to teach the compounds disclosed in claims 31 to 45. Further, new claim 21 limits the reducing group of formula (4) to a reducing group derived from a hydroxyurea or a phenidone, and limits the silver iodide content of the silver halide to 40 % by mol to 100 % by mol. Okada fails to disclose the combination of the compound represented by formula (4) and the specific silver iodide content. Consequently, claims 21-46 are all considered patentable over Okada et al.

Response to Office Action of November 2, 2004  
U.S. Application No.: 10/633,253

Attorney Docket No.: FSF-031431

Because Okada et al. does not teach or suggest the photothermographic material of the present invention, the withdrawal of the rejection is respectfully requested.

## **II. Response to Claim Rejection under 35 U.S.C. § 103**

### **A. Okada et al.**

Claims 1-3 and 10-20 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Okada et al.

In the disclosure of Okada, compounds having hydroxyurea groups are not particularly preferred and not used in the Examples of Okada. Although Okada discloses silver iodide as an example of silver halide, a silver halide content of 0.1 to 20 % by mol is particularly preferred in Okada as described in column 36, lines 9-10 of Okada. In other words, a lower silver iodide content is preferred in Okada and a silver iodide content of about 2 % by mol is disclosed in an Example of Okada (column 45, lines 31-35). The combination of a compound represented by formula (4) and a silver iodide content of 40 % by mol or higher achieves unexpectedly superior prior-to-use storability and post-development image stability as clarified in the enclosed Declaration. As shown in Table 1 of the declaration, the  $\Delta S$  of the Invention Examples, which is an index representing

Response to Office Action of November 2, 2004  
U.S. Application No.: 10/633,253

Attorney Docket No.: FSF-031431

prior-to-use deterioration, was less than 40 % of  $\Delta S$  of Comparative Examples having a silver iodide content of 2 % by mol. Further, the  $\Delta D$  of the Invention Examples, which is an index representing post-development image degradation, was 0.00. In contrast, Comparative Examples having a silver iodide content of 2 % by mol showed  $\Delta D$  of at least 0.20. When the Invention Examples are compared to Examples 105 to 109 disclosed in Okada, the  $\Delta S$  of the Invention Examples is less than half of Examples 105 to 109 of Okada. Further, Examples 105 to 109 of Okada showed a  $\Delta D$  of at least 0.19, while the Invention Examples showed a  $\Delta D$  of 0.00. These advantageous characteristics would not have been expected on the basis of the disclosure of Okada. Further, Okada fails to teach or suggest the compounds disclosed in claims 31 to 45.

Since Okada neither teach nor suggest the combination of the specific compound of the present invention and the specific silver iodide range of the present invention, the withdrawal of the rejection is respectfully requested.

### **III. Response to Claim Rejection under 35 U.S.C. § 102 and 103**

#### **A. Katoh et al.**

Claims 1-3, 7, and 10-20 were rejected under 35 U.S.C. § 102 (b) or

Response to Office Action of November 2, 2004  
U.S. Application No.: 10/633,253

Attorney Docket No.: FSF-031431

alternatively under 35 U.S.C. § 103 (a) as being unpatentable over Katoh et al.

Applicants respectfully submit that Katoh et al. does not disclose the photothermographic material of the claimed invention. Katoh fails to teach the compounds disclosed in claims 31 to 45. Further, Katoh does not disclose the silver iodide content of 40 % by mol to 100 % by mol disclosed in claims 39-45 of the present application (US 10/633,253). In column 107, line 3 of Katoh, the disclosed silver iodide content is 8 % by mol. It should be noted that the compounds disclosed in Katoh has  $\gamma$ -lactam rings, which are 5-membered rings. In contrast, the present invention discloses compounds having  $\beta$ -lactam rings, which are 4-membered rings. The differences in characteristics between a  $\beta$ -lactam ring and a  $\gamma$ -lactam ring are clarified in the enclosed Declaration. In comparative experiment 2 of the Declaration, sample 102-4 of the present invention having an AgI content of 40 % and using a compound having a  $\beta$ -lactam ring showed at least 3 times higher prior-to-use storability when compared to sample 102-1 having an AgI content of 8 % and using a compound having a  $\gamma$ -lactam ring. Sample 102-1 corresponds to an example of Katoh. Moreover, sample 102-4 showed a  $\Delta D_{\min}$  of 0.00 while sample 102-1 showed a  $\Delta D_{\min}$  of 0.32. These results

Response to Office Action of November 2, 2004  
U.S. Application No.: 10/633,253

Attorney Docket No.: FSF-031431

indicate that the photothermographic materials of claims 39-45 each having an AgI content of 40 % by mol to 100 % by mol and using a compound having a  $\beta$ -lactam ring show unexpectedly superior prior-to-use storability and post-development image stability. Further, new claim 21 limits the reducing group of formula (4) to a reducing group derived from a hydroxyurea or a phenidone, neither of which is disclosed in Katoh et al. Consequently, Katoh neither teaches nor suggest the inventions disclosed in claims 21-45 of the present application.

Because Katoh et al. neither teach nor suggest the photothermographic material of the present invention, the withdrawal of the rejection is respectfully requested.

In view of the foregoing amendments and remarks, it is submitted that all of the claims currently pending in the application are in condition for allowance. Early and favorable action is respectfully requested.

Respectfully submitted,



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